Strategies in radiology to beat the next phase of the Coronavirus (COVID 19): Warrior zone.

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ABSTRACT

Different countries around the world are waging war at different stages of the COVID 19 pandemic.

As we in the United Kingdom have almost successfully navigated the first wave of the COVID 19 outbreak, the National Health Service (NHS) is fast approaching the second test, and resting our weaponry may be unwise at this time. The next phase involves the re-opening of services in a gradual, phased manner, walking the fine line between imaging waiting times and reporting capacity, keeping patient safety in the forefront.

In the background lies the unknown: the possibility of a second symptomatic phase of COVID19. Surely, this second phase should also be treated as "unprecedented circumstances" and measures would need to be adopted to work with the need of the hour.

We present a few models in this commentary to consider in the United Kingdom, while structuring your department in the coming weeks to cope with this change. Working hours for radiologists may remain altered for a few more months to come, to cope with this. As such, a single victory over the initial symptomatic phase of COVID 19 (although not a meagre achievement) is not to be considered as the battle won.

INTRODUCTION

Every country must adapt its healthcare system depending on the availability of resources at the point of time. What remains in the shadows is the uncertainty and lack of knowledge to tame this beast. Like true war tactics, we do not know when, if, and where the enemy will strike next. Hospitals throughout the United Kingdom are currently reaching the end of the first phase of the COVID 19 pandemic.

On 30th January 2020, the first phase of the NHS' response to COVID 19 was triggered with the declaration of a level 4 national incident. Then, on 17th March 2020, in light of SAGE (Scientific Advisory Group for Emergencies) advice and Government directives, the NHS initiated the fastest ever redeployment of resources (1). This triggered suspending all non-urgent diagnostics in most trusts across the country. This approach was cascaded into many specialties, thus reducing new requests on the system. The main aim was to lessen the load on the NHS system and prepare for the influx of COVID 19 symptomatic patients. This would also take into account a reduced workforce in the NHS due to self-isolation and symptomatic healthcare workers. It also incorporated reducing the risk of contracting infection in patients with co-existing conditions which would predispose them to cytokine storm and ITU admissions. While this change demonstrated the desired effect, it has left an enormous number of differed examinations, when added onto the current referrals, total up to a large number of unscanned patients to deal with and prioritise. Radiology departments across the country are now grappling with this huge challenge and working out their own strategies and plans to climb this mountain.

DISCUSSION

Most departments have already succeeded in dividing their imaging facilities for inpatients and outpatients. Having multiple scanners certainly helps, but departments with limited scanners or scanning capacity should look at renting a mobile scanner in the medium term. This not only solves the above issue, but also obviates the need of outpatients entering the main hospital building. This can also be achieved by utilising any scanning facilities in outreach centres and community hospitals. In fact, more of the outpatient services should be shifted to these centres enabling a clear demarcation between acute and elective care. Also, the capacity in the private sector should be utilised for this purpose;

this will help in easing the pressure on the NHS which simply cannot cope with the backlogs. A recent directive by the Chief Executive and Chief Operating Officer of NHS England dated 29 April 2020 as part of the second phase of the NHS response to COVID 19, has aided this effect (2).

The patient footfall in departments should also be kept to a minimum by innovative ways of working. Patient waiting times in the department should be reduced, ideally, patients should not be waiting in the department at all. Technology should be embraced in line with the NHS long term plan (including artificial intelligence) for booking, scheduling, checking in and communication of results (3). Patients should simply be able to walk in, have their examination performed and walk out at their allocated time. This should go along with increased capacity and staggered lists to prevent overcrowding, thereby ensuring patient and staff safety. Needless to say, appropriate infection control measures should be strictly implemented to protect both staff and patients.

New requests may be filtered at source with the referrer having to confirm whether the examination is required during the COVID 19 crisis, whether the patient has been explained the risks of having the examination in the current circumstances and when the expected follow up appointment with the clinician would be, thus helping radiology triage patients better.

Our proposed models for rescheduling scans differed due to the COVID 19 crisis:

1. The “modality” approach: The workhorse modality in radiology is currently thought to be CT, the most used for acute presentations and cancer imaging, which forms a significant proportion of the work. We should adapt to minimise patient contact, fast patient throughput and increase diagnostic capacity. CT lists may need to be optimised in terms of 12 hour days with 7 day working to cope with the backlog. Subsequent modalities to consider opening would be MRI and ultrasound. Radiographic imaging is relatively less time consuming to report and is unlikely to cause a burden on the majority of the work during this second phase.
2. The “priority/ urgency” approach: Priority of the scan is an important consideration in “damage control”. Two week wait (2WW) and urgent requests would require precedence over the follow up and elective

cases. There is a case to cancel all routine requests with a letter back to the referrer to re-assess prior to re-requesting.

Another consideration is staffing the radiology department adequately and capacity for reporting to cope with the images generated. We would not aid other specialties with a large number of unreported scans and so there needs to be a constant imaging-report train built to optimise throughput. Several departments across the country have changed job plans, working time and adopted remote reporting to cope with these unprecedented times. If the second phase of the pandemic is to be considered part of this, out of hours reporting or staggered working/ reporting time and capacity over a 7-day working week may be required to enable prompt reporting. This may either be incorporated into a radiologist's job plan and normal working hours (with premium hours reporting counted as such) or may be taken as time off in lieu at a later point in the cash strapped NHS. It would enable a greater throughput by optimising room, scanner and staffing capacity. For example, if there are three ultrasound lists scheduled per room per day instead of two, then a higher number of scans per day is achievable. This would mean that there is less staff on site any given time, but that is probably achievable given that this is transient until we return to normalcy in the NHS.

The other change in practice which will put a strain on radiology resources and will have a major conflict with IR(ME)R [Ionising Radiation (Medical Exposure) Regulation] is the increase in requests for pre-operative chest x-rays and chest CT. Following concerns expressed by various bodies, The Royal College of Radiologists issued a statement and published guidance on "use of CT Chest to screen for COVID 19 in pre-operative patients" (4). This should help us push back any unnecessary referrals which do not make a difference to patient management.

It may take several more months before we see normalcy in any subspecialty of medicine but certainly as the pivot or center point of the clock face, radiology relates to every other medical field and delays or successes in radiology reflect heavily on the performance of healthcare as a whole. The Royal College has recently published interim recovery guidelines as well (5) which provide further useful information and suggestions to consider during this trying time.

We are aware that different healthcare systems across the world are at different stages of the pandemic, but these steps may well be adapted to local needs. Overall, the coming months will be equally challenging (if not more), but there is light at the end of the tunnel, and with adequate strategy and planning, this hopefully will all be a distant memory.

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